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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.	
10/533,996	12/12/2005	Harald Schmidt	16096.11	2594	
22913	7590	11/20/2009	EXAMINER		
Workman Nydegger		LEE, DANIEL H.			
1000 Eagle Gate Tower		ART UNIT		PAPER NUMBER	
60 East South Temple		1791			
Salt Lake City, UT 84111					
MAIL DATE		DELIVERY MODE			
11/20/2009		PAPER			

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/533,996	SCHMIDT, HARALD	
	<b>Examiner</b>	<b>Art Unit</b>	
	DANIEL LEE	1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 07 August 2009.  
 2a) This action is **FINAL**.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-20 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-20 is/are rejected.  
 7) Claim(s) 12 is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____ .
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date _____.	6) <input type="checkbox"/> Other: _____ .

## **DETAILED ACTION**

The Amendment filed on August 7, 2009 has been entered. Claims 1-20 are pending.

### ***Claim Objections***

The previous objections to claims 7 and 12 have been withdrawn in view of Applicant's amendment.

Claim 12 is objected to because of minor informalities. In claim 12, "polyactic acid (PLB)" should be "polylactic acid (PLA)."

### ***Claim Rejections - 35 USC § 112***

The previous 112 rejection of claims 1 and 2 has been withdrawn in view of Applicant's amendment.

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 6 and 17 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to

one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 6 and 17 have new matter. Applicant has added the limitation of at least about 5% of fiber into both claims. The specification only has support for about 5%. Since the term "at least" encompasses numerical ranges greater than "about," this is considered new matter.

***Claim Rejections - 35 USC § 103***

The previous 103 rejection of claims 1-20 has been withdrawn in view of Applicant's arguments.

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 1-20 rejected under 35 U.S.C. 103(a) as being unpatentable over Loercks et al. ("Loercks", US 6062228) in view of Figlar et al. ("Figlar", US 6779529) and Floyd et al. ("Floyd", US 4411280), also as evidenced by Yamaguchi (US 4269204).
3. Regarding claims 1-20, Loercks discloses a biodegradable filter material and method for its manufacture. Loercks teaches a process of a biodegradable filter is made by a method which involves using fibers, films, or foams prepared in an extrusion method from biopolymers based on thermoplastic starch or its polymer compositions (abstract). Loercks teaches the method comprises the following steps (see claim 1):

- a. continuously supplying a mixture to an extruder, the mixture consisting essentially of a starch-based polymer;
- b. heating and kneading the mixture under conditions so as to form a thermoplastic melt;
- c. extruding the thermoplastic melt through a die to form an extrudate of the thermoplastic melt;
- d. causing the extrudate to develop a porous configuration;
- e. compressing the extrudate and forming an endless filter rod; and
- f. wrapping the filter rod and forming single filter elements.

4. As to claim 4, Loercks teaches the starch or starch-based mixture can be a foamed or fibrous material as discussed above.

5. As to claims 7 and 8, Loercks teaches the method steps as discussed above with the exception of step (g) in claim 8, which is addressed below.

6. As to claim 9, step (d) of Loercks is considered to form pores/filter channels (causing the extrudate to develop a porous configuration), which occurs before step (f) (forming single filter elements).

7. As to claim 11, Loercks teaches starch foam and starch polymer film as discussed above.

8. As to claim 12, Loercks teaches polyester urethanes and flow auxiliaries can be used as additives (claim 1 (a)).

9. Further regarding claims 1, 3, 5, 8, and 13, Loercks does not expressly teach the alternately succeeding layers of filtering material and activated carbon stacked transversely with respect to the direction of gas flow.

10. Figlar discloses a cigarette filter that includes a multiple section filter which reduces the level of smoke constituents (abstract). Figlar depicts in Figure 4 a cigarette filter having alternately succeeding layers or sections stacked transversely. Figlar teaches, as shown in Figure 4, in a multiple section filter of a cigarette, the adsorbents may be packed within the filter plug material as thin layer sections of general adsorbent and selective adsorbent (col. 5, lines 60-64). Claim 1 of Figlar discloses that the general adsorbent material can be selected from the group consisting of activated charcoal, activated coconut carbon, and activated coal-based carbon, *inter alia*. Figlar further teaches the use of any filter plug known in the art (col. 2, lines 5-6).

11. As to claims 3 and 5, Figure 4 of Figlar depicts the filtering material forming a base for the general adsorbent material, which as discussed above can be activated carbon (or activated carbon powder).

12. It would have been obvious to one of ordinary skill in the art at the time of the invention to use a multiple section filter as taught by Figlar in order to achieve synergistic reductions in smoke vapor constituents (col. 1, lines 9-12).

13. Further regarding claims 1, 2, and 13-19, Loercks teaches an open-pore foam (col. 7, line 13) but does not expressly teach the pores and/or filter channels having a diameter in the range of about 50 to 100 microns. Nor do Loercks and Figlar teach forming filter channels by water jets, needles or a laser beam.

14. Floyd discloses ventilated thermoplastic polymer foam filter rods.
15. As to claim 10, Floyd teaches ventilation can be accomplished by mechanical perforation (i.e. needles), laser perforation (i.e. laser beam), and so forth (col. 2, lines 5-8).
16. As to claims 1-2 and 13-19, Floyd teaches pores with an average size of from about 50 to 150 microns (col. 3, lines 16-19). One of ordinary skill in the art would appreciate that pores or filter channels made by needles or lasers would be continuous and would extend all the way through the filtering material. Floyd also depicts in Figures 6-11 that pores may be formed in any direction (without the use of needles or laser) and can be aligned partly transversely (Fig. 10) with respect to the direction of gas flow and substantially aligned with the direction of gas flow (Fig. 7).
17. It would have been obvious to one of ordinary skill in the art at the time of the invention to vary the degrees of ventilation or air dilution to reduce or direct overall smoke delivery as taught by Floyd (col. 2, lines 1-4).
18. As to claims 6, 17, and 20, the above references do not expressly teach that natural fibers are present in the amount of at least 5% by volume. However, it is well known in the art that cotton fibers are commonly used as a component in cigarette filters. Loercks further discloses composition where starch is utilized in amount as low as approximately 2% to as high as 74% with respect to the amount of the polymer. Since applicants claim "at least about 5 %" then the amounts as high as 74% read on instant claims.

19. Additionally Yamaguchi teaches that, in order to trap such toxic substances in smoking, there has been taken a measure wherein a filter made of fibrous material of cotton, synthetic resin, or glass, or made of a continuous cellular foamed plastic or the like is used as arranged at an end of a cigaret, alone or as combined with granular or powdery activated carbon or within a cigaret holder (col. 1, lines 17-24). The limitations as claimed in claim 6, 17, and 20 would fall within the scope of what is well known in the cigarette filtering art.

***Response to Amendment and Arguments***

20. Applicant's arguments have been fully considered.

21. Applicant argues that the present application enjoys an actual filing date of October 16, 2003. However, Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

22. Applicant argues that the absence of Zhuang et al. as prior art renders claim 1 to be patentable over the references or record. This argument is moot in view of the new grounds of rejection.

23. Applicant argues that the references do not disclose or suggest the inclusion of natural fibers in an amount of at least 5% by volume. This argument is moot in view of the new grounds of rejection.

24. Applicant argues that the references do not teach filter channels are formed by water jets, needles, or a laser beam. This argument is moot in view of the new grounds of rejection.

25. Applicant's arguments regarding claims 13-20 are also rendered moot in view of the new grounds of rejection.

***Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL LEE whose telephone number is (571)270-7711. The examiner can normally be reached on Monday-Friday, 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Katarzyna Wyrozebski can be reached on (571)272-1127. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. L./  
Examiner, Art Unit 1791

/KAT WYROZEBSKI/  
Supervisory Patent Examiner, Art Unit 1791